

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION**

R2 Solutions LLC,

Plaintiff,

v.

Roadget Business Pte. Ltd.

Defendant.

Civil Action No. 4:24-cv-00971

Jury Trial Demanded

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff R2 Solutions LLC files this Complaint against Roadget Business Pte. Ltd. for infringement of U.S. Patent Nos. 8,341,157 (“the ’157 patent”), 7,698,329 (“the ’329 patent”), 8,209,317 (“the ’317 patent”), 9,805,097 (“the ’097 patent”), and 8,527,623 (“the ’623 patent”). The ’157 patent, ’329 patent, ’317 patent, ’097 patent, and ’623 patent are referred to collectively as the “patents-in-suit.”

THE PARTIES

1. Plaintiff R2 Solutions LLC (“R2”) is a Texas limited liability company located in Frisco, Texas.

2. Defendant Roadget Business Pte. Ltd (“SHEIN”) is a private limited company organized under the laws of Singapore. On information and belief, SHEIN maintains a principal place of business at 12 Marina Boulevard, #15-01, Marina Bay Financial Centre, Singapore 018982. SHEIN conducts business in Texas and, particularly, the Eastern District of Texas, directly or through intermediaries (including subsidiaries, distributors, affiliates, retailers, suppliers, integrators, customers, and others).

3. According to SHEIN's website, SHEIN is a "global fashion and lifestyle online retailer."¹ Through its online platform² and related SHEIN mobile application(s)³ (collectively, "SHEIN's Online Store"), SHEIN commercializes fashion and lifestyle products to and throughout the United States, including this District, under the trademarked "SHEIN" brand.

4. SHEIN owns, maintains, uses, operates, distributes, and provides SHEIN's Online Store, either directly or through its foreign and U.S.-based subsidiaries and affiliates. SHEIN maintains a substantial corporate presence in the United States via at least its U.S.-based subsidiaries and affiliates, including SHEIN US Services, LLC ("SHEIN U.S."), a Delaware limited liability company with its principal place of business at 777 S. Alameda St., 2nd Floor, Los Angeles, CA 90021. Upon information and belief, SHEIN U.S. is a wholly-owned subsidiary, either directly or indirectly, of SHEIN. SHEIN U.S. is SHEIN's agent, operating at SHEIN's direction and control. Subject to such direction and control, SHEIN U.S. maintains, uses, operates, distributes, and provides SHEIN's Online Store within this District and the United States to commercialize fashion and lifestyle products to residents within this District and the United States.

5. SHEIN also induces its subsidiaries, affiliates, customers, and end-users in the making, using, selling, and/or offering for sale the Accused Instrumentalities (defined below) to and throughout the United States, including this District. To this end, SHEIN and its foreign and U.S.-based subsidiaries and affiliates, including SHEIN U.S., act together as part of SHEIN's global fashion and lifestyle online retail enterprise, operate as agents of and for one another, and otherwise act vicariously for SHEIN as elements of the same business group and/or enterprise.

¹ See <https://us.shein.com/About-Us-a-117.html>; <https://www.sheingroup.com/about-us/our-global-presence/>.

² Available at, e.g., <https://us.shein.com>.

³ Available at, e.g., https://play.google.com/store/apps/details?id=com.zzkko&hl=en_US&pli=1 and <https://apps.apple.com/us/app/shein-shopping-online/id878577184>.

Indeed, they work in concert and in orchestrated fashion, subject to agreements that are far nearer than arm's length, to provide the Accused Instrumentalities within this District and the United States. SHEIN owns a number of trademarks for "SHEIN."

JURISDICTION AND VENUE

6. This action arises under the patent laws of the United States, 35 U.S.C. § 101, *et seq.* This Court's jurisdiction over this action is proper under the above statutes, including 35 U.S.C. § 271, *et seq.*, 28 U.S.C. § 1331 (federal question jurisdiction), and 28 U.S.C. § 1338 (jurisdiction over patent actions).

7. This Court has personal jurisdiction over SHEIN consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute because, among other things, (i) SHEIN has done and continues to do business in Texas, and (ii) SHEIN has committed and continues to commit, directly or through intermediaries (including its subsidiaries, affiliates, customers, and end-users), acts of patent infringement in this State in violation of 35 U.S.C. § 271.

8. Relative to patent infringement, SHEIN itself has committed and continues to commit acts in violation of 35 U.S.C. § 271, and has made, used, marketed, distributed, offered for sale, and/or sold infringing instrumentalities in this State, including in this District, and otherwise engaged in infringing conduct within and directed at, or from, this District. Such infringing instrumentalities include, without limitation, the front-end(s) and back-end(s) of SHEIN's Online Store, as well as all other systems, services, processes, methods, acts, components (hardware and/or software), and/or other instrumentalities associated with (i) searches or queries performed in connection with SHEIN's Online Store, (ii) collection, analysis, and response to user

online behaviors in connection with SHEIN's Online Store, and (iii) functionality identified in Exhibits 6-10 (altogether, the "Accused Instrumentalities").

9. SHEIN has also committed acts in violation of 35 U.S.C. § 271 within this State and elsewhere within the United States through direction and control of its subsidiaries and affiliates (e.g., SHEIN U.S.), which gives rise to this action and/or has established minimum contacts with this forum such that the exercise of personal jurisdiction over SHEIN would not offend traditional notions of fair play and substantial justice. *See Trois v. Apple Tree Auction Center, Inc.*, 882 F.3d 485, 490 (5th Cir. 2018) ("A defendant may be subject to personal jurisdiction because of the activities of its agent within the forum state...."); *see also Cephalon, Inc. v. Watson Pharmaceuticals, Inc.*, 629 F. Supp. 2d 338, 348 (D. Del. 2009) ("The agency theory may be applied not only to parents and subsidiaries, but also to companies that are 'two arms of the same business group,' operate in concert with each other, and enter into agreements with each other that are nearer than arm's length."). SHEIN controls and otherwise directs and authorizes all activities of its U.S.-based subsidiaries, including SHEIN U.S. Such directed and authorized activities include the U.S.-based subsidiaries (e.g., SHEIN U.S.) maintaining, using, operating, distributing, and providing the Accused Instrumentalities and/or their attendant components. For example, SHEIN U.S. is a wholly-owned subsidiary, directly or indirectly, of SHEIN. The primary business of SHEIN U.S. is the marketing, support, and provision of the Accused Instrumentalities in the United States. Thus, on information and belief, because SHEIN's U.S.-based subsidiaries are authorized by SHEIN to maintain, use, operate, distribute, and provide the Accused Instrumentalities covered by the patents-in-suit, SHEIN's U.S.-based subsidiaries' corporate presences in the United States give SHEIN substantially the same business advantage it would enjoy if it conducted its business through its own offices and personnel.

10. SHEIN has derived substantial revenues from its infringing acts occurring within this State and this District. It has substantial business in this State and this District, including (i) its infringing activities alleged herein, and (ii) regularly doing or soliciting business, engaging in other persistent conduct, and/or deriving substantial revenue via the Accused Instrumentalities provided to Texas residents vicariously through and/or in concert with its agents, subsidiaries, and affiliates.

11. In addition, SHEIN has knowingly induced, and continues to knowingly induce, infringement within this District by advertising, marketing, offering, and providing the Accused Instrumentalities to others, including customers and end-users of SHEIN's Online Store. This includes SHEIN providing instructions, advertising, and/or marketing materials facilitating, directing, and encouraging use of infringing functionality with SHEIN's knowledge thereof.

12. SHEIN has, thus, in the multitude of ways described above, availed itself of the benefits and privileges of conducting business in this State and willingly subjected itself to the exercise of this Court's personal jurisdiction. Indeed, SHEIN has sufficient minimum contacts with this forum thorough (i) its transaction of substantial business in this State and this District, and (ii) its commission of acts of patent infringement as alleged in this Complaint that are purposefully directed towards this State and District.

13. Alternatively, the Court maintains personal jurisdiction over SHEIN under Federal Rule of Civil Procedure 4(k)(2).

14. Venue is proper in this District pursuant to 28 U.S.C. § 1391 because, among other things, SHEIN is not a resident of the United States, and thus may be sued in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). *See In re HTC Corp.*, 889 F.3d 1349, 1357

(Fed. Cir. 2018) (holding that “[t]he Court’s recent decision in TC Heartland does not alter” the alien-venue rule).

BACKGROUND

15. The patents-in-suit were filed by Yahoo! Inc. (“Yahoo!”) between 2006 and 2009. At the time, Yahoo! was a leading Internet communications, commerce, and media company. Yahoo! invested billions of dollars in research and development over this period, filing hundreds of patent applications each year to cover the innovative computing technologies emerging from its expansive research and development efforts.

16. Yahoo! began as a directory of websites that two Stanford graduate students developed as a hobby. The name “Yahoo” stands for “Yet Another Hierarchical Official Oracle,” a nod to how the original Yahoo! database was arranged hierarchically in layers of subcategories. From this initial database, Yahoo! would develop and promulgate numerous advancements in the field of data storage and recall.

17. For example, in 1995, Yahoo! introduced Yahoo! Search. This software allowed users to search the Yahoo! directory, making it the first popular online directory search engine. This positioned Yahoo! as the launching point for most users of the World Wide Web. By 1998, Yahoo! had the largest audience of any website or online service.

18. However, the early iterations of Yahoo! Search did not operate like a modern search engine because Yahoo! Search was only a directory. Yahoo! Search first integrated a Web crawling engine in 2000. Yahoo! Search used Google’s Web crawling engine from 2000–2004. During this time, Yahoo! was developing its own Web search technologies. Yahoo! deployed its own Web crawler in early 2004. The engine, known as Slurp, allowed Yahoo! to collect documents from the Web and build a searchable index. The patents-in-suit relate to innovations associated with Yahoo!

Search that were developed and implemented during this period, which enabled Yahoo! to become Google's biggest competitor in the search engine space.

THE PATENTS-IN-SUIT

19. The '157 patent is entitled, "System and Method for Intent-Driven Search Result Presentation." The '157 patent lawfully issued on December 25, 2012 and stems from U.S. Patent Application No. 12/533,299, which was filed on July 31, 2009.

20. The '329 patent is entitled, "Method for Improving Quality of Search Results by Avoiding Indexing Sections of Pages." The '329 patent lawfully issued on April 13, 2010 and stems from U.S. Patent Application No. 11/652,356, which was filed on January 10, 2007.

21. The '317 patent is entitled, "Method and Apparatus for Reconstructing a Search Query." The '317 patent lawfully issued on June 26, 2012 and stems from U.S. Patent Application No. 13/270,933 filed on October 11, 2011. The '317 patent is a continuation of U.S. Patent Application No. 12/765,676 filed on April 22, 2010, which is a continuation of U.S. Patent Application No. 11/502,202 filed on August 10, 2006.

22. The '097 patent is entitled, "Method and System for Providing a Search Result." The '097 patent lawfully issued on October 31, 2017 and stems from PCT Application No. PCT/CN2014/094122, which was filed on December 17, 2014.

23. The '623 patent is entitled, "User Vacillation Detection and Response." The '623 patent lawfully issued on September 3, 2013 and stems from U.S. Patent Application No. 11/963,493, which was filed on December 21, 2007.

24. R2 Solutions is the owner of the patents-in-suit with all substantial rights, including the exclusive right to enforce, sue, and recover damages for past, present, and future infringements.

25. The claims of the patents-in-suit are directed to patent eligible subject matter under 35 U.S.C. § 101. They are not directed to abstract ideas, and the technologies covered by the claims consist of ordered combinations of features and functions that, at the time of invention, were not, alone or in combination, well-understood, routine, or conventional. Indeed, the specifications of the patents-in-suit disclose shortcomings in the prior art and then explain, in detail, the technical ways the claimed inventions resolve or overcome those shortcomings.

The '157 patent

26. Relative to the '157 patent, the specification explains that if, as in the case of traditional search engines, the “engine simply regards a web query as, for example, a ‘bag of words’, the search engine will search for web pages and other data objects (e.g., images, audio files, text files) that contain, or are otherwise associated with, the individual words within the query.” '157 patent at 4:1-5. However, simply treating a user query as a “bag of words” may yield results that do not align with the purpose of the user’s search. Additionally, it can be onerous to scrutinize generated results for a desired returned object, as the objects can be unremarkable as to each other. *Id.* at 4:10-15. Thus, the specification teaches:

Search results could be significantly enhanced if the likely intent of the query is known. For example, search results may be ranked such that results that are more relevant to the user’s intent appear at or near the top of the search results. Perhaps more significantly, however, the user’s intent can be used to customize the display and behavior of a search result to be narrowly targeted to a user’s intent. An illustrative list of such customizations could include a customized title or abstract for the result or specialized parameters of a displayed clickable URL to provide the landing page with information regarding the user’s intent or triggered by the user’s intent.

Id. at 4:16-26.

27. This “intents”-driven search engine process offers significant technical features that constitute enhancements over then-existing search engine technology. For example, the ’157 patent discusses how pre-programmed “intents” can be mapped to from query keywords, and how “intents” determination can be fine-tuned via particular parameters:

The query is then classified into one or more likely intents, which can include an unclassified intent when no defined intents match the query 2300. An intent is a mapping from many combinations of keywords to a relatively small set of common goals that users pursue in a search query or session of multiple queries. Often, the intent of the query is not explicitly stated in the keywords. While the space of possible queries, is very large, the set of intents is much smaller. Examples of intents relating to product queries can be, for example: official-site, research, purchase, dealer, support, or reviews. Examples of intents relating to local/map queries: directions, reviews, phone, hours-of-operation. In one embodiment, query intent may be determined by linguistic analysis of query keywords. In one embodiment, previous queries in the user session, user profile information such as preferences, the set of all queries from all users or any subset of all users (e.g. a subset of users having specific demographics or usage patterns), and click data from previous sessions for the current user as well as the set of all users or any subset of all users are used to determine query intent.

Id. at 9:42-61.

28. The “intents”-driven search engine process of the ’157 patent ensures that query keywords, via the “intents,” can even ultimately impact how particular data objects are constructed within a result. This provides an added benefit of enabling keywords to be utilized for more than just relevancy analysis. Also, while other search engines existing at the time could tailor search results by ranking the results and displaying each result with a title and brief abstract taken from the document, the ’157 patent explains how “results could be significantly enhanced if the likely intent of the query is known.” *Id.* at 4:16-17. Rather than return all documents having a matching

keyword—i.e., by using traditional indexing methods—a narrower set of results can be returned if the search results are “ranked such that results that are more relevant to the user’s intent appear at or near the top of the search results.” *Id.* at 4:17-19.

29. Indeed, the claims of the ’157 patent provide just such a solution to the problem of generating robust yet usable search results in response to a user query. For example, Claim 1 of the ’157 patent discloses a method comprising:

receiving, over a network, a query from a user, the query comprising at least one query token;

analyzing the query, using at least one computing device, to *identify at least one query keyword*;

determining, at least the one computing device, *a plurality of intents from the at least one keyword, each of the plurality of intents indicates a type of information regarding the query keyword that is likely to be desired by a user submitting the query*;

classifying the query, using the at least one computing device, *into at least one of the plurality of intents*;

identifying, using the at least one computing device, a plurality of data objects available over the network that match the at least one query keyword;

assigning, using the at least one computing device, *at least one of the plurality of intents to at least some of the plurality of data objects*;

ranking, using the at least one computing device, the plurality of data objects;

building a result, using the at least one computing device, using the ranked plurality of data objects, the result comprises a plurality of display entries, *at least one display entry customized to a respective assigned intent is constructed for each of the ranked plurality of data objects*; and

transmitting the result, over the network, to the user.

(emphasis added).

30. These technical features highlight that Claim 1 itself outlines a novel process executed by a specialized programming architecture that constitutes a significant improvement in computer functionality. Each of the technical features emphasized above operates cooperatively to enhance the technological process of search engine application, and these advances define a novel improvement in computer capabilities.

31. Thus, the inventions claimed in the '157 patent improve the speed, efficiency, effectiveness, and functionality of computer systems rather than improve upon some other task for which a computer is used in its ordinary capacity. For example, the '157 patent focuses on circumventing the “bag of words” approach in result generation, and ultimately achieves better, more-usable computer-generated results as compared to technologies that existed in 2009. As another example, the '157 patent can rank documents based on intent rather than using “a traditional {query,document} score,” increasing the probability that a relevant result will be in the final result set presented to the user. *Id.* at 12:7-22. This reduces the number of queries that must be processed in order to return relevant results to the user. As a result, the processor is free to allocate more resources to other tasks.

The '329 patent

32. With respect to the '329 patent, the specification explains that nefarious parties can trick traditional search engines “into recalling documents and inflating their ranking” using techniques known as “search engine spamming.” '329 patent at 2:6-8. For example, spamming may be used to “trick search engine ranking algorithms into recalling and highly ranking documents that contain . . . sponsored links to a web merchant.” *Id.* at 2:8-11. The result is that search results for many queries include irrelevant content that the querier did not desire. *Id.* at 2:14-17. The specification gives a specific example of an online shopper:

A typical example of search engine spam is when a user tries to search for the terms “digital camera reviews” and expects to find pages which review various models of digital cameras, detailing performance specifications, sample images and reviewer pros and cons list. Having this expectation when the user clicks on a link for one of the results, the user is instead led to a page that contains nothing but a plethora of keywords and links to other stores where he can buy the camera.

Id. at 2:18-27. Thus, the specification recognizes that “there is need for mechanisms that prevent hiding of search engine spam but yet allow webmasters to designate page content that should not be indexed.” *Id.* at 2:34-37.

33. The specification describes a novel approach to achieve this goal:

As a crawler examines an individual document, one of the attributes that can be considered is section structure. In examining the various sections, the crawler identifies sections to ignore, that is, to not index in search engine indexes and otherwise use for recalling the document. Such sections are referred to herein as “no-recall sections.” Those portions that are indexed for recalling are referred to as recall sections. In an embodiment, a crawler ignores no-recall sections demarcated by, for example, a tag. In another embodiment a no-recall section may be identified by analyzing section content rather than examining only delimiters. The terms inside no-recall sections do not contribute to the document term frequency counts and are not used for recalling the documents in response to search engine queries. However the no-recall sections are included as input to forms of analysis of the document that affect, for example, the document’s ranking. Links inside the no-recall sections as well as the rest of the document may be followed in order to discover new content. The document may be analyzed for the amount of advertisements or other features in its entirety. Therefore, terms inside the no-recall sections can affect document ranking.

Id. at 3:7-27. This approach solves the problem described in the specification by simultaneously enabling ranking that is not dictated by relevance scores and preventing nefarious parties from

hiding search engine spam, e.g., because pages with “copious amounts of advertisements, or low quality links, will be readily identified and ranked accordingly.” *Id.* at 3:28-31.

34. Claim 1 of the ’329 patent embodies this solution:

A method, comprising:

ranking a plurality of documents recalled by a search engine for a query;

wherein the plurality of documents contain certain documents, ***each document of said certain documents containing at least one section that is not used by said search engine for recall*** and one or more sections that are used by said search engine for recall;

wherein ranking a plurality of documents includes ranking said plurality of documents ***based, at least in part, on the at least one section of said certain documents not used by said search engine to recall documents***; and

wherein the method is performed by one or more computing devices.

(emphasis added).

35. Claim 1 communicates two overarching technological improvements: 1) an improved data structure that is capable of facilitating both search engine recall and improved ranking via the attributes of recall and no-recall sections; and 2) an improved ranking process rooted in a specialized computing device and/or software capable of delineating between and selectively employing recall and no-recall sections found in a plurality of the aforementioned improved data structures. These two technological advancements, working in tandem, realize a discrete process and/or system that greatly improves upon search engine technology that existed in 2007.

36. The claimed method of search engine architecture improves navigation of the World Wide Web by increasing the relevance of search results and thwarting nefarious Web users seeking to game Web query rankings. *See, e.g., Id.* at 1:67-2:17. By improving the functionality of navigating the Web, the claimed invention is necessarily rooted in the improvement of computer

functionality, as opposed to, e.g., enhancing the economy of a task usually performed by hand. For example, by not ignoring no-recall sections when ranking the documents, the claimed invention prevents a document from being “designed so that content that increases recall and/or ranking potential is placed in the recall section and content that diminishes high ranking potential is hidden in a no-recall section.” *Id.* at 4:1-9. This allows “[a]ll the attributes in all of the sections of a document such as ‘links’, frequency of terms, coloring, font, etc.” to be considered in the spam and relevancy analyses. *Id.* at 4:13-16. The result is that a search engine can “affect the recall and ranking of documents to more accurately reflect relevance of the documents to search engine queries.” *Id.* at 3:1-3. This technological solution is the precise reason that the ’329 patent was allowed, as is apparent from the prosecution history.

The ’317 patent

37. Relative to the ’317 patent, the specification explains that existing search engine interfaces “may be rigid and require users to submit full queries to perform search[es].” ’317 patent at Abstract. Traditional search engines were built with desktop computer users in mind. Thus, they were designed with the assumption that a user had access to a full keyboard for composing a complete, properly structured search query. However, as noted in the specification of the ’317 patent, users at the time could increasingly access the internet from a variety of devices, including “cell phones, personal digital assistants, and the like.” *Id.* at 1:44-47. Portability started to become “an increasingly important concern for users.” *Id.* at 1:50-52. The increasing portability of these devices came with a tradeoff in input capabilities. *See id.* at 1:50-52. For example, most phones at the time the ’317 patent was filed did not have a full keyboard. The simpler input mechanisms available on mobile devices presented a barrier to entering properly structured queries, thus limiting users’ ability to fully explore the Internet. *See id.* at 1:52-53.

38. To solve these problems, the '317 patent discloses “a flexible and intuitive system for reconstructing a search query based on a received partial query.” *Id.* at 1:16-18. This solution is embodied in Claim 1 of the '317 patent:

A computer database system for providing search results to a user in response to user submissions over a data network, the computer database system comprising:
a database configured to store information about events in the computer database system; and

a query reconstruction server in data communication with the database and operative to receive a partial query submitted at a remote user client system by a user seeking search results matching the submitted partial query and, ***in response to the received partial query, determine a full query*** based on

- (i) the received partial query, and
- (ii) information stored in the database about queries previously-submitted by users,

wherein the submitted partial query comprises an abbreviated or incomplete search query which is not fully representative of an entire search query desired by the user and the full query is better representative of the entire search query desired by the user.

(emphasis added).

39. The specification explains that partial queries are “shorthand ways of expressing typical search queries.” *Id.* at 3:15-17. For example, “auto ins” may be a partial query for the full search query “auto insurance.” *Id.* at 3:20-23. While “auto ins” may be an intentional abbreviation, it might also be a typographical error resulting from the restrictive input options of a mobile device. Because the claimed invention will nevertheless be able to take the incomplete query “auto ins” and return search results for “auto insurance,” a broader array of mobile devices and input mechanisms may be used to search the Internet. *See id.* at 1:43-56.

The '097 patent

40. With respect to the '097 patent, the specification addresses disadvantages in prior art approaches to searching algorithms and renderings. For example, the '097 patent explains that “[c]onventional approaches for providing a search result focus on presenting the items in the search result as a list. For example, a conventional search result includes items listed from top to bottom on a screen. This can limit user engagement on the search result as the user may lose interest after viewing the top two items.” ’097 patent at 1:30-35. “It is [also] time consuming for the user to scroll up and down to find an interesting item with a listed presentation....” *Id.* at 1:35-40.

41. As a solution to this drawback, the '097 patent enables, in response to a search query, the displaying of content items in a framed structure (e.g., displaying thumbnails of the video content in some framed structure), as opposed to a list of search results going from top to bottom, where there is a correspondence between one or more content items and at least one sub-component. The solution is embodied in Claim 1 of the '097 patent:

A method, implemented on at least one computing device each of which has at least one processor, storage, and a communication platform connected to a network for providing a search result, the method comprising:

receiving a search request from a user;

determining a plurality of content items based on the search request;

selecting one or more content items from the plurality of content items;

generating a framed structure having at least one sub-component;

determining a correspondence between the one or more content items and the at least one sub-component;

arranging each of the one or more content items with respect to a corresponding sub-component;

generating a search result based on the one or more content items and the framed structure; and

providing the search result.

(emphasis added).

42. The inventions described and claimed in the '097 patent improve the speed, efficiency, effectiveness, and functionality of computer systems. Moreover, the inventions provide an improvement in computer functionality beyond rote tasks for which a computer is used in its ordinary capacity. For example, the '097 patent enhances “search result generation and presentation, realized as a specialized and networked system by utilizing one or more computing devices (e.g., mobile phone, personal computer, etc.) and network communications (wired or wireless).” *Id.* at 4:29-33. The '097 patent provides significant advantages over prior art by “providing a search result to a user to improve the user engagement and/or increase revenue for a search engine. After submitting a query to a search engine, a user may receive a search result including one or more content items. The user’s interest on the items may be stimulated not only by their content but also by a manner of providing or presenting them.” *Id.* at 4:33-40.

The '623 patent

43. Relative to the '623 patent, the specification addresses the absence of prior systems, processes, or methods for providing internet users in “a state of indecision” with relevant and/or targeted information that can assist them in resolving their indecision. *See* '623 patent at 1:10-36. Specifically, the '623 patent explains that internet users, when faced with large number of “virtual storefronts, prices, and purchase options and incentives,” are “often caught in a state of indecision ... vacillating between products, vacillating between vendors, vacillating between service providers, and the like.” *Id.* at 1:11-16. Accordingly, the '623 patent posits that it would be “beneficial if a computer system could detect when individuals are in a state of indecision and then respond accordingly” by, for example, providing “relevant and/or targeted information that could be used by the individuals to help remove the uncertainty.” *Id.* at 1:16-21. The '623 patent notes that “no such system” existed at the time of the patent. *Id.* at 1:26.

44. As a solution to this problem, the '623 patent teaches a novel approach which includes, among other elements, “constructing a vacillation event data structure” based on “information associated with on-line behavior of a user” in response to detecting a “vacillation pattern.” *Id.* at 1:43-2:6. The '623 patent discloses that the detection of the vacillation pattern may include “detecting a pattern of vacillating between potentially purchasing different objects or detecting a pattern of vacillating between potentially purchasing and not purchasing a single object.” *Id.* at 1:51-55. Accordingly, the “vacillation event data structure” can “identif[y] one or more objects associated with the vacillation pattern,” and “information relating to at least one object identified in the vacillation event data structure” is provided to the user. *See id.* at 1:55-2:6. Such improvement is described in at least Claim 1 of the '623 Patent:

A method for detecting and responding to user vacillation, comprising:
obtaining, by a processor, information associated with on-line behavior of a user;
automatically detecting, by the processor, a vacillation pattern relating to at least one object based on the obtained information;
constructing, by the processor, a vacillation event data structure based on the obtained information in response to detecting the vacillation pattern, the vacillation event data structure comprises information associated with the user, the at least one object, and a degree of vacillation demonstrated by the user with respect to the at least one object; and
providing, by the processor, information relating to the at least one object associated with the vacillation pattern to the user in response to detecting the vacillation pattern.

(emphasis added)

45. Thus, Claim 1 details a technological improvement to existing computer systems that is driven by a specialized “vacillation event data structure” generated in response to a user “vacillation pattern.” This specialized data structure facilitates the provision of relevant and targeted information to a user to resolve user vacillation, realizing significant advantages over the

prior art. *See id* at 1:26. Indeed, Claim 1’s technical features improve upon the efficiency, effectiveness, and functionality of computer systems related to online commerce by enabling collected user vacillation data to ultimately assist in the resolution of user uncertainty via a specialized data structure born of such detected vacillation.

46. This improvement is also evidenced by the patent’s specification, which explains that an exemplary system incorporating the novel approach discussed above can include a vacillation packager configured to construct a “Vacillation Event Model (VEM)” which is a “data structure that stores information about a detected vacillation pattern.” *Id.* at 7:33-44. The VEM data structure includes data associated with “objects about which the user is vacillating” and the “degree of vacillation demonstrated by the user.” *Id.* at 7:44-58. The specification additionally provides that after a VEM data structure has been constructed, it can be “used to directly engage user in a decision making process via a vacillation presentation system” which is configured to provide to the user information related to the objects identified in the VEM data structure, including, for example, “supplemental information for a user in a state of vacillation, advertising relating to products, services or vendors involved in the vacillation, or coupons or other commercial incentives for a product, service or vendor involved in the vacillation.” *Id.* at 7:65-8:8; 9:42-58. This results in a system, process, and/or method capable of “providing relevant and/or targeted information that can be used by the user to help remove the indecision.” *Id.* at 1:33-35. The technological solution of constructing an improved vacillation event data structure is the precise reason that the ’623 patent was allowed, as is apparent from the prosecution history.

47. In essence, each of the patents-in-suit relate to novel and non-obvious inventions in the fields of search engines, data analytics, and database structures.

DEFENDANT’S PRE-SUIT KNOWLEDGE

48. Prior to the filing of this Complaint, SHEIN was notified on numerous occasions of the R2 portfolio to which the patents-in-suit belong, and R2 has further attempted to engage SHEIN in licensing discussions related to the patents-in-suit for more than seven months.

49. On March 12, 2024, Evan W. Woolley, Vice President of Licensing of R2, sent a letter electronically to Vincent Liu, SHEIN’s “General Counsel of the Americas” and “Head of Business Operations & Categories Legal,”⁴ offering an opportunity to negotiate a broad license to the portfolio that includes the patents-in-suit. The letter explained that R2’s portfolio originated from Yahoo! and that it includes patents covering a variety of technologies relevant to SHEIN. The letter further explained that R2 has licensed many companies through negotiated deals and had also resolved several lawsuits involving the patents at issue here.

50. Mr. Woolley followed up with Mr. Liu via email on April 1, 2024, and a hard copy of the original March 12 letter was sent to Mr. Liu via FedEx on April 18, 2024.

51. On May 6, 2024, Mr. Woolley sent Mr. Liu yet another letter, again offering to open negotiations with SHEIN and reiterating that R2 had resolved certain litigation, demonstrating the value of R2’s portfolio to SHEIN.

52. SHEIN ignored each of these attempts to engage in a licensing dialogue. As a result, R2 is left with no other choice but to file suit.

COUNT I
INFRINGEMENT OF U.S. PATENT NO. 8,341,157

53. This cause of action arises under the patent laws of the United States, and in particular, 35 U.S.C. §§ 271, *et seq.*

⁴ See <https://www.linkedin.com/in/vincent-y-liu/>.

54. R2 is the owner of the '157 patent with all substantial rights to the '157 patent, including the exclusive right to enforce, sue, and recover damages for past and future infringements.

55. The '157 patent is valid and enforceable and was duly issued in full compliance with Title 35 of the United States Code.

Direct Infringement (35 U.S.C. § 271(a))

56. SHEIN has directly infringed and continues to directly infringe one or more claims of the '157 patent in this District and elsewhere in Texas and the United States.

57. SHEIN has infringed and continues to infringe, either by itself or via an agent, at least claims 1-5 and 7-10 of the '157 patent by, among other things, making, offering to sell, selling, testing, and/or using the Accused Instrumentalities.

58. Attached hereto as Ex. 1, and incorporated herein by reference, is an exemplary claim chart detailing how SHEIN infringes the '157 patent.

59. SHEIN is liable for its infringements of the '157 patent pursuant to 35 U.S.C. § 271.

Indirect Infringement (Inducement – 35 U.S.C. § 271(b))

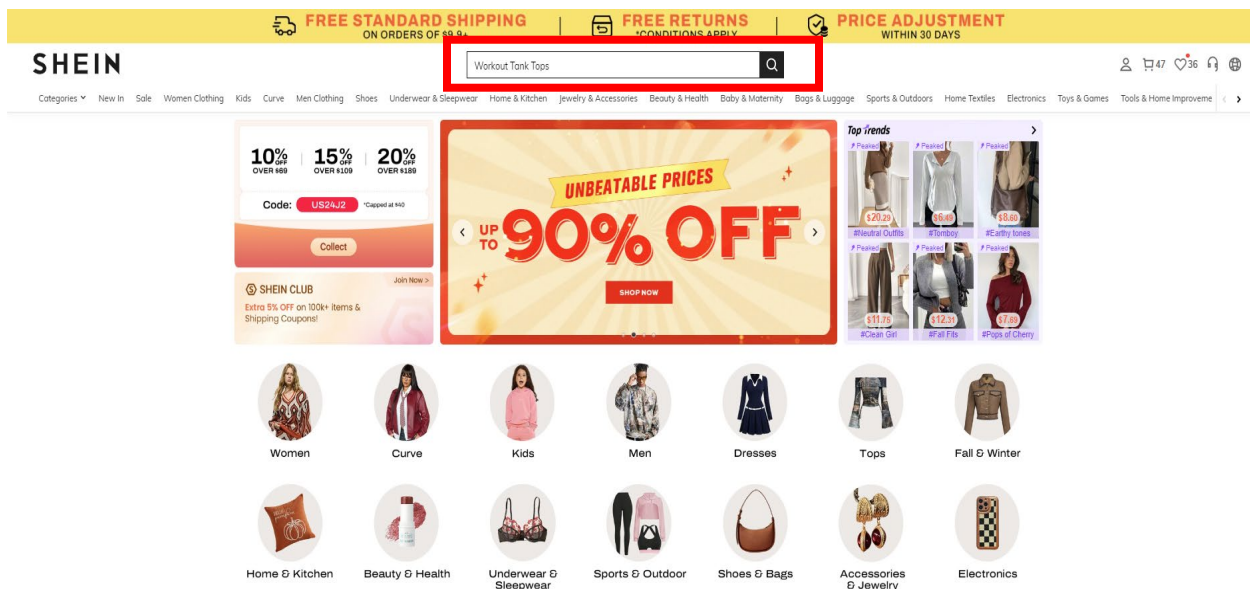
60. In addition and/or in the alternative to its direct infringement, SHEIN has indirectly infringed and continues to indirectly infringe one or more claims of the '157 patent by inducing direct infringement by its customers and end users of the Accused Instrumentalities.

61. SHEIN has had knowledge of the '157 patent at least since March 12, 2024, when Mr. Woolley contacted SHEIN offering an opportunity to negotiate a broad license to R2's patent portfolio that includes the '157 patent. At a minimum, SHEIN has had knowledge of the '157 patent since being served with this Complaint.

62. Users of the Accused Instrumentalities, such as SHEIN's customers and end users of SHEIN's Online Store, directly infringe the '157 patent, including at least claim 2, when they use the Accused Instrumentalities in the manner shown in Exhibit 6 attached hereto.

63. Despite having knowledge (or being willfully blind to the fact) that use of the Accused Instrumentalities infringes the '157 patent, SHEIN has specifically intended, and continues to specifically intend, for persons (such as SHEIN's customers and end users of SHEIN's Online Store) to use the Accused Instrumentalities in ways that infringe the '157 patent, including at least claim 2. Indeed, SHEIN knew or should have known that its actions have induced, and continue to induce, such infringements.

64. SHEIN instructs and encourages customers and end users to use the Accused Instrumentalities in ways that infringe the '157 patent. For example, the SHEIN website prominently displays a search interface with pre-populated, demonstrative search terms (e.g., "Workout Tank Tops") to induce users to search for fashion and lifestyle-related products and, ultimately, use the search functionality in ways that infringe the '157 patent:



<https://us.shein.com/>.

Damages

65. R2 has been damaged as a result of SHEIN's infringing conduct described in this Count. SHEIN is, thus, liable to R2 in an amount that adequately compensates it for SHEIN's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT II
INFRINGEMENT OF U.S. PATENT NO. 7,698,329

66. This cause of action arises under the patent laws of the United States, and in particular, 35 U.S.C. §§ 271, *et seq.*

67. R2 is the owner of the '329 patent with all substantial rights to the '329 patent, including the exclusive right to enforce, sue, and recover damages for past and future infringements.

68. The '329 patent is valid and enforceable and was duly issued in full compliance with Title 35 of the United States Code.

Direct Infringement (35 U.S.C. § 271(a))

69. SHEIN has directly infringed and continues to directly infringe one or more claims of the '329 patent in this District and elsewhere in Texas and the United States.

70. SHEIN has infringed and continues to infringe, either by itself or via an agent, at least claims 1, 4-5, 8, and 11-12 of the '329 patent by, among other things, making, offering to sell, selling, testing, and/or using the Accused Instrumentalities.

71. Attached hereto as Ex. 2, and incorporated herein by reference, is an exemplary claim chart detailing how SHEIN infringes the '329 patent.

72. SHEIN is liable for its infringements of the '329 patent pursuant to 35 U.S.C. § 271.

Indirect Infringement (Inducement – 35 U.S.C. § 271(b))

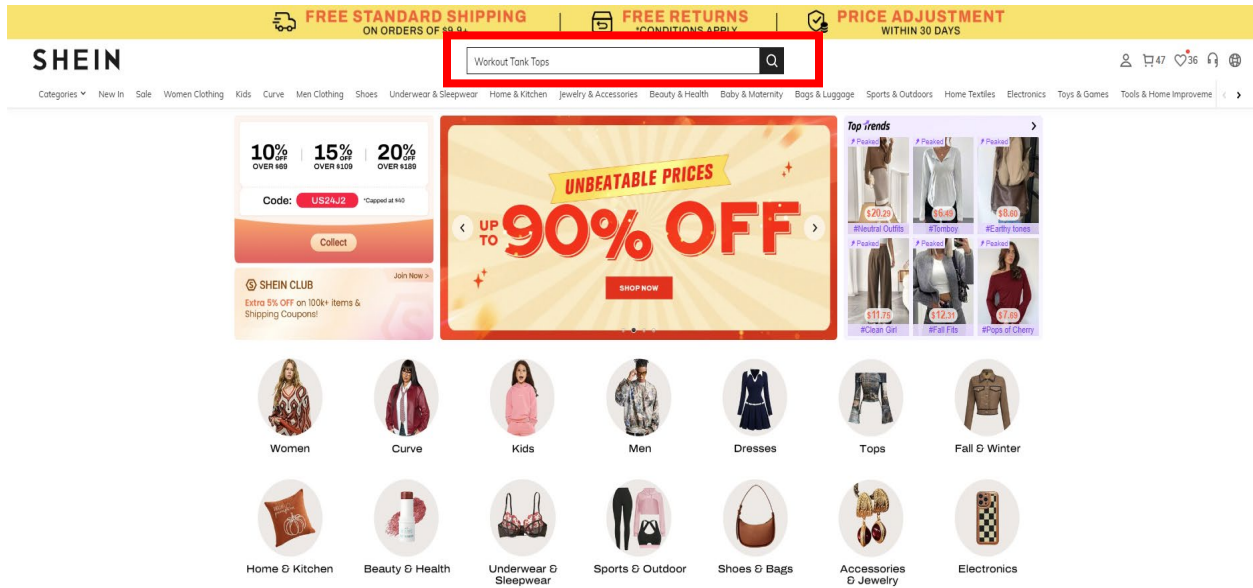
73. In addition and/or in the alternative to its direct infringement, SHEIN has indirectly infringed and continues to indirectly infringe one or more claims of the '329 patent by inducing direct infringement by its customers and end users of the Accused Instrumentalities.

74. SHEIN has had knowledge of the '329 patent at least since March 12, 2024, when Mr. Woolley contacted SHEIN offering an opportunity to negotiate a broad license to R2's patent portfolio that includes the '329 patent. At a minimum, SHEIN has had knowledge of the '329 patent since being served with this Complaint.

75. Users of the Accused Instrumentalities, such as SHEIN's customers and end users of SHEIN's Online Store, directly infringe the '329 patent, including at least claim 8, when they use the Accused Instrumentalities in the manner shown in Exhibit 7 attached hereto.

76. Despite having knowledge (or being willfully blind to the fact) that use of the Accused Instrumentalities infringes the '329 patent, SHEIN has specifically intended, and continues to specifically intend, for persons (such as SHEIN's customers and end users of SHEIN's Online Store) to use the Accused Instrumentalities in ways that infringe the '329 patent, including at least claim 8. Indeed, SHEIN knew or should have known that its actions have induced, and continue to induce, such infringements.

77. SHEIN instructs and encourages customers and end users to use the Accused Instrumentalities in a manner than infringes the '329 patent. For example, the SHEIN website prominently displays a search interface with pre-populated, demonstrative search terms (e.g., "Workout Tank Tops") to induce users to search for fashion and lifestyle-related products and, ultimately, use the search functionality in ways that infringe the '329 patent:



<https://us.shein.com/>.

Damages

78. R2 has been damaged as a result of SHEIN's infringing conduct described in this Count. SHEIN is, thus, liable to R2 in an amount that adequately compensates it for SHEIN's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT III INFRINGEMENT OF U.S. PATENT NO. 8,209,317

79. This cause of action arises under the patent laws of the United States, and in particular, 35 U.S.C. §§ 271, *et seq.*

80. R2 is the owner of the '317 patent with all substantial rights to the '317 patent, including the exclusive right to enforce, sue, and recover damages for past and future infringements.

81. The '317 patent is valid and enforceable and was duly issued in full compliance with Title 35 of the United States Code.

Direct Infringement (35 U.S.C. § 271(a))

82. SHEIN has directly infringed and continues to directly infringe one or more claims of the '317 patent in this District and elsewhere in Texas and the United States.

83. SHEIN has infringed and continues to infringe, either by itself or via an agent, at least claims 1-2, 8-10, and 12 of the '317 patent by, among other things, making, offering to sell, selling, testing, and/or using the Accused Instrumentalities.

84. Attached hereto as Ex. 3, and incorporated herein by reference, is an exemplary claim chart detailing how SHEIN infringes the '317 patent.

85. SHEIN is liable for its infringements of the '317 patent pursuant to 35 U.S.C. § 271.

Indirect Infringement (Inducement – 35 U.S.C. § 271(b))

86. In addition and/or in the alternative to its direct infringement, SHEIN has indirectly infringed and continues to indirectly infringe one or more claims of the '317 patent by inducing direct infringement by its customers and end users of the Accused Instrumentalities.

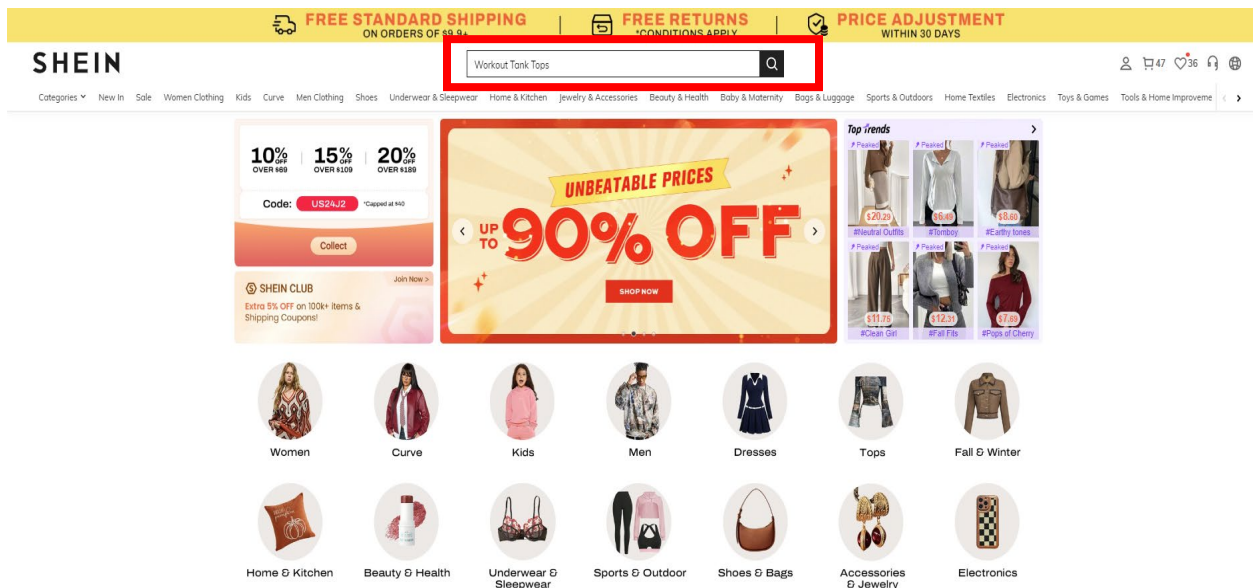
87. SHEIN has had knowledge of the '317 patent at least since March 12, 2024, when Mr. Woolley contacted SHEIN offering an opportunity to negotiate a broad license to R2's patent portfolio that includes the '317 patent. At a minimum, SHEIN has had knowledge of the '317 patent since being served with this Complaint.

88. Users of the Accused Instrumentalities, such as SHEIN's customers and end users of SHEIN's Online Store, directly infringe the '317 patent, including at least claim 1, when they use the Accused Instrumentalities in the manner shown in Exhibit 8 attached hereto.

89. Despite having knowledge (or being willfully blind to the fact) that use of the Accused Instrumentalities infringes the '317 patent, SHEIN has specifically intended, and continues to specifically intend, for persons (such as SHEIN's customers and end users of SHEIN's

Online Store) to use the Accused Instrumentalities in ways that infringe the '317 patent, including at least claim 1. Indeed, SHEIN knew or should have known that its actions have induced, and continue to induce, such infringements.

90. SHEIN instructs and encourages customers and end users to use the Accused Instrumentalities in ways that infringe the '317 patent. For example, the SHEIN website prominently displays a search interface with pre-populated, demonstrative search terms (e.g., “Workout Tank Tops”) to induce users to search for fashion and lifestyle-related products and, ultimately, use the search functionality in ways that infringe the '317 patent:



<https://us.shein.com/>.

Damages

91. R2 has been damaged as a result of SHEIN’s infringing conduct described in this Count. SHEIN is, thus, liable to R2 in an amount that adequately compensates it for SHEIN’s infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT IV
INFRINGEMENT OF U.S. PATENT NO. 9,805,097

92. This cause of action arises under the patent laws of the United States, and in particular, 35 U.S.C. §§ 271, *et seq.*

93. R2 Solutions is the owner of the '097 patent with all substantial rights to the '097 patent, including the exclusive right to enforce, sue, and recover damages for past and future infringements.

94. The '097 patent is valid and enforceable and was duly issued in full compliance with Title 35 of the United States Code.

Direct Infringement (35 U.S.C. § 271(a))

95. SHEIN has directly infringed and continues to directly infringe one or more claims of the '097 patent in this District and elsewhere in Texas and the United States.

96. SHEIN has infringed and continues to infringe, either by itself or via an agent, at least claims 1, 3, 8-10, and 17-20 of the '097 patent by, among other things, making, offering to sell, selling, testing, and/or using the Accused Instrumentalities.

97. Attached hereto as Ex. 4, and incorporated herein by reference, is an exemplary claim chart detailing how SHEIN infringes the '097 patent.

98. SHEIN is liable for its infringements of the '097 patent pursuant to 35 U.S.C. § 271.

Indirect Infringement (Inducement – 35 U.S.C. § 271(b))

99. In addition and/or in the alternative to its direct infringement, SHEIN has indirectly infringed and continues to indirectly infringe one or more claims of the '097 patent by inducing direct infringement by its customers and end users of the Accused Instrumentalities.

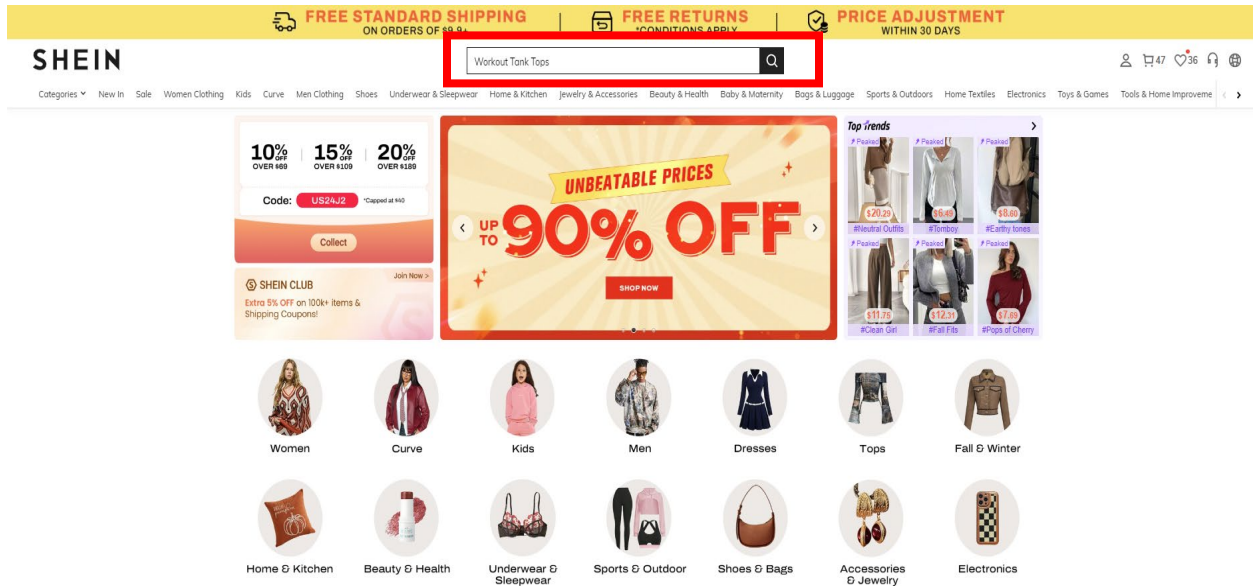
100. SHEIN has had knowledge of the '097 patent at least since March 12, 2024, when Mr. Woolley contacted SHEIN offering an opportunity to negotiate a broad license to R2's patent

portfolio that includes the '097 patent. At a minimum, SHEIN has had knowledge of the '097 patent since being served with this Complaint.

101. Users of the Accused Instrumentalities, such as SHEIN's customers and end users of SHEIN's Online Store, directly infringe the '097 patent, including at least claim 10, when they use the Accused Instrumentalities in the manner shown in Exhibit 7 attached hereto.

102. Despite having knowledge (or being willfully blind to the fact) that use of the Accused Instrumentalities infringes the '097 patent, SHEIN has specifically intended, and continues to specifically intend, for persons (such as SHEIN's customers and end users of SHEIN's Online Store) to use the Accused Instrumentalities in ways that infringe the '097 patent, including at least claim 10. Indeed, SHEIN knew or should have known that its actions have induced, and continue to induce, such infringements.

103. SHEIN instructs and encourages customers and end users to use the Accused Instrumentalities in ways that infringe the '097 patent. For example, the SHEIN website prominently displays a search interface with pre-populated, demonstrative search terms (e.g., "Workout Tank Tops") to induce users to search for fashion and lifestyle-related products and, ultimately, use the search functionality in ways that infringe the '097 patent:



<https://us.shein.com/>.

Damages

104. R2 Solutions has been damaged as a result of SHEIN's infringing conduct described in this Count. SHEIN is, thus, liable to R2 Solutions in an amount that adequately compensates it for SHEIN's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT V INFRINGEMENT OF U.S. PATENT NO. 8,527,623

105. This cause of action arises under the patent laws of the United States, and in particular, 35 U.S.C. §§ 271, *et seq.*

106. R2 Solutions is the owner of the '623 patent with all substantial rights to the '623 patent, including the exclusive right to enforce, sue, and recover damages for past and future infringements.

107. The '623 patent is valid and enforceable and was duly issued in full compliance with Title 35 of the United States Code.

Direct Infringement (35 U.S.C. § 271(a))

108. SHEIN has directly infringed and continues to directly infringe one or more claims of the '623 patent in this District and elsewhere in Texas and the United States.

109. SHEIN has infringed and continues to infringe, either by itself or via an agent, claims 1-23 of the '623 patent by, among other things, making, offering to sell, selling, testing, and/or using the Accused Instrumentalities.

110. Attached hereto as Ex. 5, and incorporated herein by reference, is an exemplary claim chart detailing how SHEIN infringes the '623 patent.

111. SHEIN is liable for its infringements of the '623 patent pursuant to 35 U.S.C. § 271.

Indirect Infringement (Inducement – 35 U.S.C. § 271(b))

112. In addition and/or in the alternative to its direct infringement, SHEIN has indirectly infringed and continues to indirectly infringe one or more claims of the '623 patent by inducing direct infringement by its customers and end users of the Accused Instrumentalities.

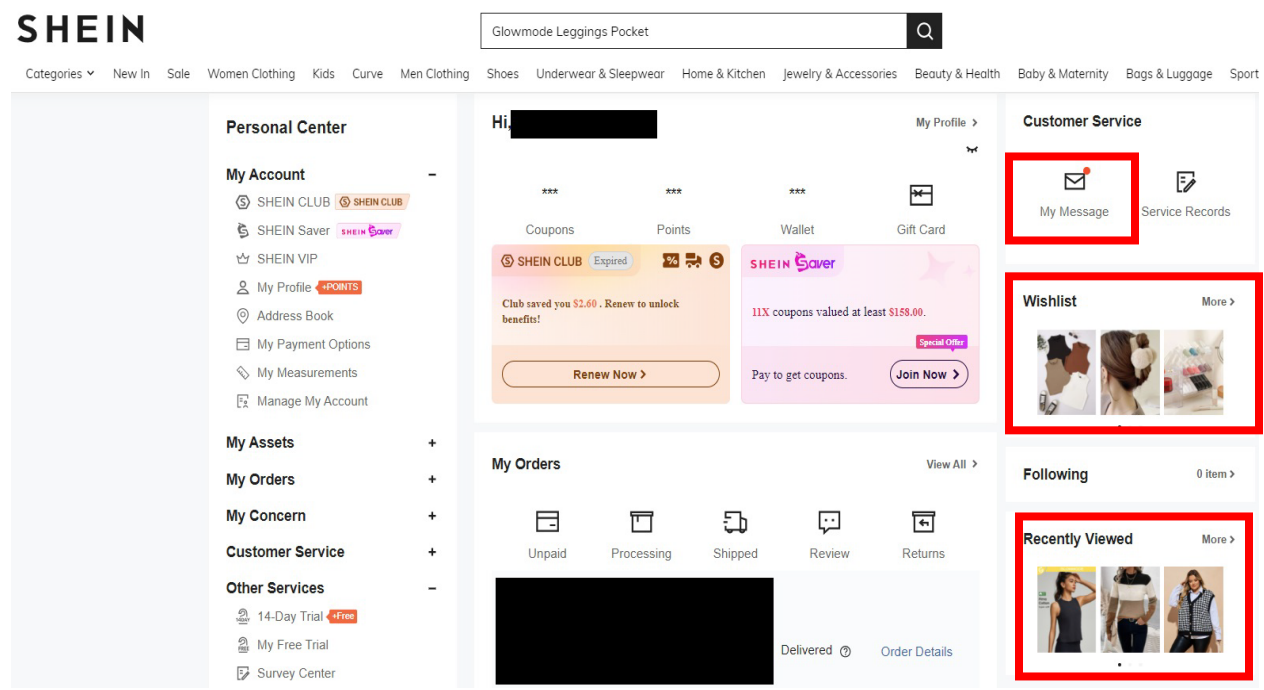
113. SHEIN has had knowledge of the '623 patent at least since March 12, 2024, when Mr. Woolley contacted SHEIN offering an opportunity to negotiate a broad license to R2's patent portfolio that includes the '623 patent. At a minimum, SHEIN has had knowledge of the '623 patent since being served with this Complaint.

114. Users of the Accused Instrumentalities, such as SHEIN's customers and end users of SHEIN's Online Store, directly infringe the '623 patent, including at least claim 13, when they use the Accused Instrumentalities in the manner shown in Exhibit 9 attached hereto.

115. Despite having knowledge (or being willfully blind to the fact) that use of the Accused Instrumentalities infringes the '623 patent, SHEIN has specifically intended, and continues to specifically intend, for persons (such as SHEIN's customers and end users of SHEIN's

Online Store) to use the Accused Instrumentalities in ways that infringe the '623 patent, including at least claim 13. Indeed, SHEIN knew or should have known that its actions have induced, and continue to induce, such infringements.

116. SHEIN instructs and encourages customers and end users to use the Accused Instrumentalities in ways that infringe the '623 patent. For example, the SHEIN website prominently displays functionalities by which information associated with user vacillation may be collected and/or detected (e.g., "Wishlist," "Recently Viewed," etc.), and functionalities by which information related to user vacillation may be communicated to the user (e.g., "My Message," etc.), inducing users to engage with the Accused Instrumentalities in ways that infringe the '623 patent.



<https://us.shein.com/user/index>

Damages

117. R2 Solutions has been damaged as a result of SHEIN's infringing conduct described in this Count. SHEIN is, thus, liable to R2 Solutions in an amount that adequately

compensates it for SHEIN's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

DEMAND FOR A JURY TRIAL

R2 demands a trial by jury on all issues triable of right by jury pursuant to Rule 38 of the Federal Rules of Civil Procedure.

PRAYER FOR RELIEF

R2 respectfully requests that this Court enter judgment in its favor and grant the following relief:

- (i) Judgment and Order that SHEIN has directly and/or indirectly infringed one or more claims of each of the patents-in-suit;
- (ii) Judgment and Order that SHEIN must pay R2 damages under 35 U.S.C. § 284, including supplemental damages arising from any continuing, post-verdict infringement for the time between trial and entry of the final judgment, together with an appropriate accounting;
- (iii) Judgment and Order that SHEIN must pay R2 reasonable ongoing royalties on a go-forward basis after final judgment;
- (iv) Judgment and Order that SHEIN must pay R2 pre-judgment and post-judgment interest on the damages awarded;
- (v) Judgment and Order that SHEIN must pay R2's costs;
- (vi) Judgment and Order that the Court finds this case exceptional under the provisions of 35 U.S.C. § 285 and requiring SHEIN to pay R2's attorneys' fees; and
- (vii) Such other and further relief as the Court may deem just and proper.

Dated: October 29, 2024

Respectfully submitted,

/s/ Edward R. Nelson III

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